CLAIMS

We claim:

1. A method of detecting influenza virus in a subject suspected of being infected with influenza, said method comprising:

(1) obtaining a biological fluid sample from the subject;

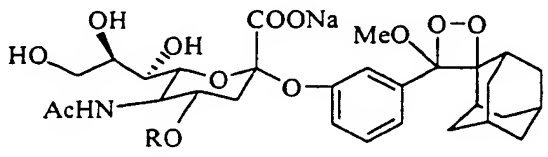
(2) contacting at least a portion of the biological fluid sample with a substrate containing a chemiluminescent derivative of 4-alkoxy-N-acetylneuraminic acid or 4,7-dialkoxy-N-acetylneuraminic acid such that, when the chemiluminescent derivative is in contact with influenza virus contained in the fluid sample, it will yield a chemiluminescence product which will generate light; and

(3) detecting whether light has been generated.

2. The method as described in claim 1, wherein the substrate contains the chemiluminescent derivative of 4-alkoxy-N-acetylneuraminic acid.

3. The method as described in claim 1, wherein the substrate contains the chemiluminescent derivative of 4,7-dialkoxy-N-acetylneuraminic acid.

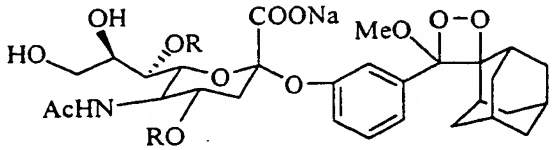
4. The method as described in claim 2, wherein the chemiluminescent derivative has the formula



wherein R is an alkyl radical containing 1 to 6 carbon atoms.

5. The method as described in claim 4, wherein R is a methyl radical.

6. The method as described in claim 3, wherein the chemiluminescent derivative has the formula



wherein each R is independently selected from the group consisting of alkyl radicals have 1 to 6 carbon atoms.

7. The method as defined in claim 6, wherein each R is a methyl radical.

8. The method as defined in claim 1, wherein a high or ultra-high speed photographic film is used to detect whether light has been generated.

9. The method as defined in claim 6, wherein a high or ultra-high speed photographic film is used to detect whether light has been generated.

10. An influenza diagnostic kit comprising

(1) a sampling device to obtain a biological fluid sample from a subject, and

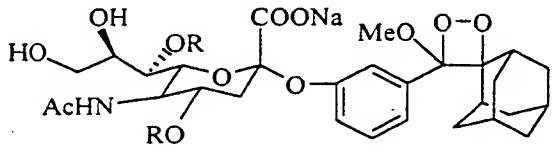
(2) a test system for detecting the presence of an influenza virus in the biological fluid, the system comprising (i) a substrate containing a chemiluminescent derivative of 4-alkoxy-N-acetylneuraminic acid or 4,7-dialkoxy-N-acetylneuraminic acid such that, when the chemiluminescent derivative is in contact with influenza virus contained in the fluid sample, it will yield a chemiluminescent product which will generate light and (ii) a photographic film in optical communication with the chemiluminescent derivative to detect the light if generated;

wherein the kit can be used by a layperson in a nonmedical setting.

11. The influenza diagnostic kit as described in claim 10, wherein the substrate contains the chemiluminescent derivative of 4-alkoxy-N-acetylneuraminic acid.

12. The influenza diagnostic kit as described in claim 10, wherein the substrate contains the chemiluminescent derivative of 4,7-dialkoxy-N-acetylneuraminic acid.

13. The influenza diagnostic kit as described in claim 12, wherein the chemiluminescent derivative has the formula



wherein each R is independently selected from the group consisting of alkyl radicals have 1 to 6 carbon atoms.

14. The influenza diagnostic kit as described in claim 13, wherein each R is methyl.

15. The influenza diagnostic kit as described in claim 14, wherein the photographic film is an instant type film.

16. The influenza diagnostic kit as described in claim 10, wherein the fluid sample is mixed with a diluent prior to contacting the chemiluminescent derivative.

17. The influenza diagnostic kit as described in claim 14, wherein the fluid sample is mixed with a diluent prior to contacting the chemiluminescent derivative.

18. The influenza diagnostic kit as described in claim 15, wherein the fluid sample is mixed with a diluent prior to contacting the chemiluminescent derivative.

19. The influenza diagnostic kit described in claim 10, wherein the biological fluid sample is obtained from the oral cavity, the pharyngeal cavity, or the nasopharyngeal cavity.

20. The influenza diagnostic kit described in claim 18, wherein the biological fluid sample is obtained from the oral cavity, the pharyngeal cavity, or the nasopharyngeal cavity.